

### 377 Is it safe and practical to give once daily IV tobramycin to young people with cystic fibrosis at home?

C.A. Lawrence<sup>1</sup>, L.J. Heaf<sup>1</sup>, E.F. Burrows<sup>1</sup>, J.J. Cottrell<sup>1</sup>, J. Pope<sup>1</sup>, K.W. Southern<sup>2</sup>. <sup>1</sup>Respiratory Unit, Alder Hey Children's NHS Foundation Trust, Liverpool, United Kingdom; <sup>2</sup>Child Health, University of Liverpool, Liverpool, United Kingdom

**Introduction:** IV tobramycin (Tob) is associated with renal impairment and ototoxicity, once daily (od) Tob potentially reduces these risks [1] but to ensure that serum levels remain in the therapeutic range blood must be collected before the first dose (creatinine), 18–24 hours after first dose (creatinine and Tob) and then weekly for the duration of treatment. The results of both Tob and creatinine levels must be checked before the next dose is administered in accordance with our hospital aminoglycoside policy. If serum levels fall outside the accepted ranges the dose is altered accordingly. At our unit patients receiving IV antibiotics at home use a prefilled device supplied and delivered by a home care company, with no flexibility for dose adjustment. This audit aimed to assess if we had resolved potential problems with monitoring and dose changes for patients on home IV Tob. **Method:** A 12 month retrospective audit, information collected from patient notes and hospital electronic record. Results: In a 12 month period 16 patients (age range 6–17.5 yrs) had 40 courses of od IV Tob at home. Monitoring of Tob was correct for 36/40 after the first dose, 19/40 a week later. Monitoring of creatinine was correct 35/40 at the start, 6/40 after the first dose, 18/40 a week later. All serum Tob levels were within therapeutic range, no adverse effects on serum creatinine, no dose adjustments were necessary and no disruption to treatment.

**Discussion:** This audit has identified that it is both practical and safe for patients to have od Tob at home but staff need further education to resolve problems with monitoring.

#### Reference(s)

[1] Smyth AL, CF Trust Project No.PJ467.1999.

### 379 Peripherally Inserted Central Catheter (PICC) for home IV therapy: a Belgian CF center experience

F. Wustefeld<sup>1</sup>, T. Pirotte<sup>1</sup>, F. Veyckemans<sup>1</sup>, G. Reyckler<sup>1</sup>, A. Leonard<sup>1</sup>, V. Hubaux<sup>1</sup>, P. Lebecque<sup>1</sup>. <sup>1</sup>Cliniques St-Luc, Université Catholique de Louvain, Brussels, Belgium

**Background:** Many (mostly adult) CF patients need repeated IV antibiotic treatments. Implanted ports and CVCs are commonly used in Europe but complications such as pneumothorax, infection and thrombosis are reported. We evaluated PICCs as an alternative without risk of pneumothorax, in terms of success rate, thrombogenicity, infection and safety for home IV therapy.

**Methods:** From March 2007 to January 2009, 60 PICCs were placed in 33 CF patients (age 27.6 y ± 10.6, 15 M, FEV1 = 59% pred ± 20.2). PICCs were inserted under ultrasound guidance at midhumeral level. Maintenance at home was performed by a dedicated CF nurse. PICC insertion process, related complications, and patient satisfaction were prospectively recorded.

**Results:** PICCs were successfully placed in 55/60 insertions (91%). Insertion failures occurred exclusively in women. Therapy was completed with 1 PICC in 53/55 treatments (96%). Among these, satisfaction evaluated on a visual analogic scale (1–5) was high (4.9/5). Median duration of treatment was 16 days (total: 957 PICC days, 1–6 treatments/patient). One major complication (catheter embolism) occurred; another PICC was removed prematurely by home doctor because of leakage. Following minor complications did not interfere with completion of therapy: local phlebitis (1.8%), haematoma (9%), local bleeding (9%) and local pain (12%). No infection nor occlusion were noticed.

**Conclusion:** PICC lines are safe and convenient to infuse IV antibiotics in CF patients at home. Mechanical complications are reduced with expert insertion and an adequate maintenance.

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### 378 Clinical status at start of IV treatment and effect on daily life

K. Strandner<sup>1</sup>, K. Herlitz<sup>1</sup>, A. Lindblad<sup>1</sup>. <sup>1</sup>The West Swedish CF centre, Gothenburg, Sweden

**Background:** The West Swedish CF Centre is a combined adult and pediatric outpatient clinic with 150 patients (median age 20 yrs). All patients are seen every 4–6 weeks. Patients starting iv treatment have the first dose at the clinic and then continue for 10 days or more at home or in hospital with support from the CF clinic.

**Aim:** To investigate how many of the patients fulfilled the criteria for pulmonary exacerbation by Fuchs, the number of peripheral venous catheter (pvc) needed during the treatment, number of days on iv, days in hospital and days sick leave from school/work.

**Method:** All patients who started iv treatment during the period September 1–December 31, 2008 at the CF center were included. Thirty-six patients had a follow up at the end of treatment while 11 patients stopped treatment at home after telephone consultation with the nurse.

**Results:** Forty patients (20F, median age 23, range 6–66 yrs) started a total of 47 iv treatments. Seven started two iv treatments during the period. FEV1.0 at start was 64±20%, 25 were chronically colonized with PA and 20 had iv subcutaneous devices while 27 used pvc. Two patients spent 9 and 4 days respectively in hospital. The median length of iv was 10 days, only 7 patients extended the treatment up to 15 days. Only 10/47 patients fulfilled Fuchs criteria at start. Five of 15 children were absent from school/daycare center (median 9, range 2–10 days). Of 31 iv treatments in adults, 16 were absent from work/studies (median 10, range 3–10 days). The median number of pvc used per patient were 2 (range 1–6). FEV1.0 improved by 5.7±6.4%,  $n \leq 0.001$ , while weight was unchanged.

**Conclusion:** Only 25% fulfilled Fuchs criteria. The two who were hospitalized for i.v.treatment was treated for the first time. More than 50% of the patients continued to work /go to school as usual.

### 380 Developing a Portacath needle removal device

Y. Locke<sup>1</sup>, F.P. Edensor<sup>1</sup>, T.J. Locke<sup>2</sup>. <sup>1</sup>Adult Cystic Fibrosis Centre, Northern General Hospital, Sheffield, South Yorkshire, United Kingdom; <sup>2</sup>Cardiothoracic, Northern General Hospital, Sheffield, South Yorkshire, United Kingdom

There are 100,000 reported incidences of needlestick injuries in the NHS healthcare system each year, but the overall incidence is almost certainly higher as many go unreported (www.needlestickforum.net Safer needles network 2006). As well as the threat of blood borne diseases, needle stick injuries also result in anxiety for the nurse, her family and the patient who has to be tested according to the hospital protocol. Implanted portacaths are widely used in the Cystic Fibrosis patient population. Access to the port is performed with the percutaneous insertion of a non coring needle into the port reservoir. When the needle is withdrawn there is often a degree of resistance as the needle comes out of the silicone septum. The area around the port is supported with a gloved hand due to potential resistance. The hand is then in a hazardous position due to the proximity of the needle and rebound injuries are common. It is estimated that 47% of accidental needlestick injuries from portacath needles are due to this rebound effect when withdrawing needles from the implanted port. (Stoker R: To the point: Safety Huber Needles: Managing infection control Dec 2003). It became essential that a method of prevention be sought and that the technology is available to remove the threat. The existing products were evaluated and did not meet our clinical need and therefore a modification was developed locally. We have produced a safety device that is user friendly, inexpensive to manufacture and imposes no extra discomfort to the patient. It is well recognised that the NHS has a legal duty of care to employees and invest in safer devices when available. In this case the cost to the NHS would be minimal, but the benefits of avoided injury would be considerable.